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EXAMINER

COCKS, JOSIAH C

ART UNIT	PAPER NUMBER
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3749

MAIL DATE	DELIVERY MODE
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11/15/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No. **10/797,513**

Applicant(s)

HIGGINS, BRIAN S.

Examiner

Josiah Cocks

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on August 30, 2007.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 17-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 17-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Receipt of applicant's amendment filed August 30, 2007 is acknowledged. By this amendment, applicant has amended the independent claims to recite that the reducing is chemically reducing in situ and has amended the specification to define chemically reducing as a chemical reaction where one substrate "gains an electron" or there is electron addition.

While, this terminology was not recited in the application as originally filed, the examiner notes it has been held that exact terms need not be used *in haec verba* to satisfy the written description requirement of the first paragraph of 35 USC 112. See MPEP 1301 (citing *Eiselstein v. Frank*, 52 F.3d 1035, 1038, 34 USPQ2d 1467, 1470 (Fed. Cir. 1995); *In re Wertheim*, 541 F.2d 257, 265, 191 USPQ 90, 98 (CCPA 1976)), however newly added limitations must be supported in the specification through express, implicit, or inherent disclosure. See MPEP 2163.

In this case, the examiner considers that the terms "chemically reducing" and the definition now recited in the specification are supported by the application as originally filed. For instance the example electrochemical reduction process of fuel-bound sulfur in the form of SO₃ to SO₂ described in the specification beginning on page 9 is considered to support the recitation in the claims of "chemically reducing" and the definition now appearing in the specification.

Terminal Disclaimer

2. The terminal disclaimer filed on August 30, 2007 has been reviewed and is NOT accepted.

The terminal disclaimer does not comply with 37 CFR 1.321(b) and/or (c) because:

- An attorney or agent, not of record, is not authorized to sign a terminal disclaimer in the capacity as an attorney or agent acting in a representative capacity as provided by 37 CFR 1.34 (a). See 37 CFR 1.321(b) and/or (c). In this case, the attorney signing the Terminal Disclaimer, R. Kody Jones, is not officially of record in this application.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-3** are rejected under 35 U.S.C. 103(a) as being unpatentable over **U.S. Patent No. 4,375,949 to Salooja** ("Salooja") in view of **U.S. Patent No. 4,029,752 to Cahn** ("Cahn").

Salooja discloses in the specification and figures 1-10 an invention in the same field of endeavor as applicant's invention and similar to that described in applicant's claims 1-3.

In particular, in regard to at least claim 1, Salooja discloses a method of reducing the acidity (each of nitrogen oxides and sulfur trioxides, see cols. 5-7) comprising the steps of:

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a) partially combusting the fuel in a first stage to create a reducing environment in situ (see at least col. 1, lines 50-54);

b) maintaining the reducing environment for a sufficient time period such that reducible acids are reduced to a predetermined level to achieve a desirable acidity concentration in the flue gas (see at least col. 1, lines 54-59 and cols. 5-7 describing that the nitrogen oxides and sulfur trioxides are controlled to desired/predetermined levels);

c) combusting the remainder of the fuel and combustion intermediates in a second stage with oxidizing environment; thereby decreased the acidity of the flue gas by reducing the acid concentration of the gas (see at least col. 1, lines 60-63 and lines 29-33).

In regard to the limitation the reducible acids are reduced “by electron addition”, while Salooja does disclose that the nitrogen oxides and sulfur trioxides are reduced, the reference does not appear to go into further detail as to the mechanisms of the chemical reduction, namely “by electron addition.”

Cahn teaches a method of reducing sulfur oxides that is considered to be in the same field of endeavor as both applicant's invention and Salooja. Cahn describes that sulfur oxides in a process gas stream are reduced by reaction with ammonia (i.e. NH_3) as a reducing agent (see at least col. 7, lines 48-52). Cahn clearly provides that sulfur trioxide is reduced in the same manner as the described processes for sulfur dioxide (see at least col. 7, lines 34-38). The examiner notes that at least ammonia (NH_3) is considered to be the type of reducing radical described in applicant's specification (see specification p. 9, line 14 lists NH_i). Further, the examiner also notes that Cahn also suggests that other reducing agents such as H_2 , CO , and CH_4 (also listed in applicant's specification) are recognized in the art as reducing radicals creating a

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reducing environment (see Cahn, col. 7, lines 65-68). This describes process of employing either ammonia or other above noted agent to result in the reduction of sulfur trioxide (a reducible acid) is considered to suggest the reduction by electron addition described in applicant's specification and claimed in claim 1.

Returning to Salooja, while this reference provides only some detail of the reducing of sulfur trioxides through the practice of the described method, there is clear suggestion that the reduction of sulfur trioxides is recognized in the art. Accordingly, a person of ordinary skill in the art at the time the invention was made would desirably modify the process in Salooja to incorporate the reduction by electron addition suggested by Cahn to desirably produce a gas stream that has "little or no" sulfur trioxide (see at least Cahn, col. 8, lines 41-46).

In regard to at least claim 2 and 3, Salooja describes that a catalytic burner is supplied at least in the first stage that produces lower NO_x production than conventional combustion systems (see at least col. 2, lines 7-12, col. 6, line 67 through col. 7, line 4 and col. 4, lines 31-47) and thus reasonably suggests micro-staging through the use of low-NO_x burners.

5. **Claims 2-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,375,949 to Salooja ("Salooja") in view of U.S. Patent No. 4,029,752 to Cahn ("Cahn") and further in view of applicant's admitted prior art.**

In further regard to claims 2 and 3, as noted above, while the examiner considers that the operation of the catalytic burners suggests the recited micro-staging using low NO_x burners, even if this is not a proper understanding, the examiner notes that applicant admits that the use of micro-staging using low-NO_x burners to reduce emissions in combustion furnaces is known in

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the art (see admitted prior art of page 5, lines 4-18 of applications' specification). Accordingly, even if the operation of the catalytic burners of Salooja are not properly considered to be applicant's recited micro-staging using low NOx burners, a person of ordinary skill in the art would desirably seek to incorporate micro-staging using low NOx burners in the process of Salooja in order to desirably aid in reducing NOx emissions (see admitted prior art of p. 5, lines 4-18 of applications' specification).

In regard to at least claims 4-7, applicant also admits that the use of macro-staging using over-fired air and used in combination with micro-staging using low NOx burners is known in the art (see admitted prior art of page 5, line 19 through page 6, line 5 of applications' specification). Accordingly, a person of ordinary skill in the art would seek to employ macro-staging using over-fired air in a combustion stage and/or in combination of micro-staging using low NOx burners to desirably achieve NOx emissions reduction (see admitted prior art of page 5, line 19 through page 6, line 5 of applications' specification).

6. **Claims 17-23 and 25-31** are rejected under 35 U.S.C. 103(a) as being unpatentable over **U.S. Patent No. 4,375,949 to Salooja ("Salooja")** in view of **U.S. Patent No. 4,029,752 to Cahn ("Cahn")**, and **applicant's admitted prior art**, and further in view of **U.S. Patent No. 4,196,057 to May ("May")** (previously cited).

Salooja, Cahn, and applicant's admitted prior art teach substantially all of the limitations of the methods recited in claims 17-23 and 25-31. Note that the limitations of claims 17-23 and 25-31 are considered to substantially correspond with claims 1-7, which have been addressed above, with the addition of the steps of adjusting the reducing environment to lower the flue acid

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gas dewpoint (claims 17 and 23) and measuring acid dewpoint (claim 23). These additional steps have not been identified in Salooja, Cahn, and applicant's admitted prior art.

However, In regard to claim 17, the acid of concentration of the flue gas is directly related to the acid dew point temperature of the flue gas. This is expressly noted by applicant in applicant's description of the prior art, namely "...as the SO₃ concentration increases, the acid dew point temperature of the flue gas increases." (see applicant's specification, p. 1, lines 16-18). To further support this assertion the examiner also points to May. May discloses a method which provides that "[m]easurement of dew point enables a semi-quantitative determination of the sulfur trioxide concentration in the exhaust or flue gas" (see May, col. 5, lines 30-32 and 38-42). Accordingly, a person of ordinary skill in the art would understand that reduction of the acid concentration of the flue gas necessarily results in the lowering of the acid dew point level of the flue gas. As noted above, Salooja provides for the reduction of sulfur oxides from the effluent of flue gas of a furnace to a desired level (see at least col. 1, lines 54-59 and cols. 5-7). Therefore, a person of ordinary skill in the art would reasonably understand that obtaining the reduction target of the oxides in the flue gas as specified in Salooja would necessarily result in a corresponding desired dew point level (again see at least May, col. 5, lines 38-42).

In regard to claims 18-23, these limitations correspond to those of claims 2-7 and have been identified in the prior art as noted above.

In regard to claim 25, this claim includes limitations similar to that of claim 17 with the additional method step of "measuring the acid dewpoint of the flue gas." Salooja possibly does not expressly disclose actively measuring the acid dewpoint of the flue gas.

However, May, as previously noted, clearly provides that the dew point of the exhaust gas is measured to determine a concentration of sulfur trioxide (see May, col. 5, lines 30-32). Further, May provides that the measurement of the dew point also allows for determination of "cold end" corrosion locations (May, col. 5, lines 32-34) and further that the inherent corrosion rate measurement that arises from the dewpoint measurement "indicates the degree of inhibition of an additive such as magnesium and the actual condition at the surface." (May, col. 5, lines 34-37).

Accordingly, a person of ordinary skill in the art would desirably modify the method of Salooja to incorporate measuring the acid dewpoint of the flue gas as taught in May to determine the level of corrosion that results from the additives in the flue gas (see May, col. 5, lines 30-37).

In regard to claims 26-31, these limitations correspond to those of claims 2-7 and have been identified in the prior art as noted above.

7. **Alternatively, claims 2-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,375,949 to Salooja ("Salooja") in view of U.S. Patent No. 4,029,752 to Cahn ("Cahn") and further in view of U.S. Patent No. 4,824,441 to Kindig (Kindig") (previously cited).**

Salooja in view of Cahn teach substantially all the limitations of applicant's claims 2-8 (see discussion of these references above as applied to claims 1-3) with the possibly exception of macro-staging the first stage fuel combustion through over-fired air and the use of coal as a fuel.

In regard to claims 2 and 3, again as noted above, the operation of the catalytic burners disclosed in Salooja is considered to suggest the low-NO_x burners of applicant's claims 2 and 3.

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However, even if this is not a proper understanding, Kindig is cited to provide further evidence that the use of low NOx burners. Kindig describes a method for the reduction of sulfur oxides and nitrogen oxides in a combustion process that is analogous art to applicant's invention. In Kindig, it is well understood in the art that low NOx burners are employed to desirably control the combustion reaction (see Kindig, col. 10, lines 27-32).

In regard to at least claims 4-7, Kindig also cited to show that it is well understood in the art to control combustion zone temperature by controlling the amount of oxygen feed to combustion zones (see col. 10, lines 43-47). This is considered to suggest macro-staging through the use of over-fired air as recited. Further, Kindig suggests that such macro-staging is used in combination with micro-staging using low NOx burners as recited in order to desirably controlling emission of nitrogen oxides (see col. 10, lines 43-54).

In regard to at least claim 8, each of Salooja and Cahn suggest that sulfur oxides and nitrogen oxides reduction in combustion processes is desirable when burning liquid and gaseous fuels (see Salooja, col. 1, lines 11-24 and Cahn, col. 4, lines 49-54). However, these references do not expressly mention coal as the fuel. However, Kindig clearly provides that the burning of fossil fuels, including coal, produce undesirable sulfur oxides and nitrogen oxides emissions (see Kindig, col. 1, lines 16-21). Accordingly, a person of ordinary skill in the art would reasonably understand that the combustion process of Salooja in view of Cahn would be applied to the burning of coal as a fuel source, as taught in Kindig, in order to reduce the undesirable emissions recognized to be produced by the burning of coal.

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8. **Alternatively, claims 17-32** are rejected under 35 U.S.C. 103(a) as being unpatentable over **U.S. Patent No. 4,375,949 to Salooja** ("Salooja") in view of **U.S. Patent No. 4,029,752 to Cahn** ("Cahn"), and **U.S. Patent No. 4,824,441 to Kindig** (Kindig") (previously cited) and further in view of **U.S. Patent No. 4,196,057 to May** ("May") (previously cited).

Salooja, Cahn, and Kindig teach substantially all of the limitations of the methods recited in claims 17-32. Note that the limitations of each of claim sets 17- 24 and 25-32 are considered to substantially correspond with claims 1-8, which have been addressed above, with the addition of the steps of adjusting the reducing environment to lower the flue acid gas dewpoint (claims 17 and 23) and measuring acid dewpoint (claim 23). These additional steps have not been identified in Salooja, Cahn, and Kindig.

However, in regard to claim 17, the acid concentration of the flue gas is directly related to the acid dew point temperature of the flue gas. This is expressly noted by applicant in applicant's description of the prior art, namely "...as the SO₃ concentration increases, the acid dew point temperature of the flue gas increases" (see applicant's specification, p. 1, lines 16-18). To further support this assertion the examiner also points to May. May discloses a method which provides that "[m]easurement of dew point enables a semi-quantitative determination of the sulfur trioxide concentration in the exhaust or flue gas" (see May, col. 5, lines 30-32 and 38-42). Accordingly, a person of ordinary skill in the art would understand that reduction of the acid concentration of the flue gas necessarily results in the lowering of the acid dew point level of the flue gas. As noted above, Salooja provides for the reduction of sulfur oxides from the effluent of flue gas of a furnace to a desired level (see at least col. 1, lines 54-59 and cols. 5-7). Therefore, a person of ordinary skill in the art would reasonably understand that obtaining the

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reduction target of the oxides in the flue gas as specified in Salooja would necessarily result in a corresponding desired dew point level (again see at least May, col. 5, lines 38-42).

In regard to claims 18-24, these limitations correspond to those of claims 2-8 and have been identified in the prior art as noted above.

In regard to claim 25, this claim includes limitations similar to that of claim 17 with the additional method step of “measuring the acid dewpoint of the flue gas.” Salooja possibly does not expressly disclose actively measuring the acid dewpoint of the flue gas.

However, May, as previously noted, clearly provides that the dew point of the exhaust gas is measured to determine a concentration of sulfur trioxide (see May, col. 5, lines 30-32). Further, May provides that the measurement of the dew point also allows for determination of “cold end” corrosion locations (May, col. 5, lines 32-34) and further that the inherent corrosion rate measurement that arises from the dewpoint measurement “indicates the degree of inhibition of an additive such as magnesium and the actual condition at the surface.” (May, col. 5, lines 34-37).

Accordingly, a person of ordinary skill in the art would desirably modify the method of Salooja to incorporate measuring the acid dewpoint of the flue gas as taught in May to determine the level of corrosion that results from the additives in the flue gas (see May, col. 5, lines 30-37).

In regard to claims 26-32, these limitations correspond to those of claims 2-8 and have been identified in the prior art as noted above.

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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10. **Claims 1-8 and 17-32** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-25 of copending Application No. 10/798,088.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims 1-8 and 17-32 of this application are broader in scope but claiming the same invention as that of claims 1-25 of Application No. 10/798,088.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

11. Applicant's arguments filed August 30, 2007 have been carefully considered but they are not persuasive.

Applicant first argues that that the disclosure in Salooja of "partially burning the fuel in a first stage flame and producing a substantially carbon-free or smoke free partially combusted gas phase fuel at a temperature of at least 800°C" (Salooja, col. 1, lines 50-54) does not suggest a "reducing environment." The examiner respectfully disagrees.

In response, the examiner notes that the very purpose of this described first stage is to result in a gas stream that has reduced pollutants, for example reduced NO_x (see at least Salooja, col. 1, lines 36-53). Further, Salooja further recognizes that reduction occurs in the first stage through the discussion that an additional catalyst in this first stage can "reduce still further the nitrogen oxide content of the products" (see Salooja, col. 2, lines 3-9). Accordingly, Salooja is considered to suggest a reducing environment.

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Applicant also argues that teaching in Cahn of supplying a reducing agent to chemically reduce pollutants such as SO₃ is somehow distinct from applicant's recited and disclosed process. The examiner respectfully disagrees.

In response, the examiner notes that applicant appears to assert that in applicant's invention the reducing agent is somehow generated within the reducing environment. Applicant's claims do not recite such an occurrence and further neither does applicant's disclosure. As is readily understood from applicant's disclosure, the reducing or chemically reducing environment is formed by the addition of a reducing radical, R, such as ammonia NH₃ (see applicant's specification, at least p. 9). In identical fashion, Cahn proposes the addition of a reducing radical, such as ammonia, to cause the reduction of SO₃ to SO₂. The examiner further notes that as is the case with applicant's invention, in Cahn while the reducing radical is supplied to the reaction chamber, the actual reducing or chemically reducing environment is formed within the reaction chamber (see Cahn, at least col. 7, line 48 through col. 8, line 8). When combined with the teachings of Salooja (as noted above), the examiner considers that the combined teachings of these references suggest the chemically reducing environment in situ as recited in applicant's claims.

Applicant also states that he is unclear what the reference Kindig is purported to teach in its application to claims 17-23.

In response, the examiner notes that Kindig has been applied to claims 17-32 for two main principles. First, as an alternative teaching to the disclosure of Salooja and applicant's admitted prior art as to the use of the recited micro-staging using an low NO_x burner and macro staging using over fired air. The second is in the use of a coal as a fuel source. Kindig is not

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relied upon for any component of its particular mechanism for producing a reduction environment. Accordingly, Kindig is considered to properly show that for which it has been cited.

Applicant does not appear to argue separately against the teachings of applicant's admitted prior art or May. Accordingly, these reference are considered to properly show that for which they have been cited.

Therefore, while applicant's amendments and arguments have been carefully considered, they are not persuasive. Applicant's claims are not considered to patentably distinguish applicant's invention over the prior art of record.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Josiah Cocks whose telephone number is (571) 272-4874. The examiner can normally be reached on M-F 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven McAllister, can be reached (571) 272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jcc
November 12, 2007


JOSIAH COCKS
PRIMARY EXAMINER
ART UNIT 3749